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A credit of $34 million to assist establishment in Italy of the largest nuclear power plant to be built for a private company in Europe, containing a reactor with the largest planned capacity to be sold abroad by U.S. manufacturers, was announced today by Samuel C. Waugh, President of the Export-Import Bank of Washington.

The credit was the first issued by the Bank for a single atomic power project -- the 165,000 kilowatt Enrico Fermi installation of Societa Elettronucleare Italiana, (SELNI) scheduled to go critical in about four years. The unit is designed to permit an increase in output from the initial 165,000 kw of net electrical energy to 225,000 kw as reactor technology advances.

The financing was authorized by the Bank's Board of Directors to Istituto Mobiliare Italiano (IMI) for the benefit of SELNI, which is owned by several private electric power companies. SELNI will be interconnected with the major power networks of Northern Italy. (See attached map). These companies, which have agreed to take all the power that the SELNI nuclear plant can provide, include:

Societa Edisonvolta and other companies of
the Edison Group in the Milan area
Societa Adriatica di Elettricita
Societa Trentina d'Elettricita
Societa Elettrica Selt-Valdarno

IMI is the major credit institution in Italy for medium and long-term financing to industry. Credits totaling nearly $180 million have been extended

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by the Export-Import Bank to Italian industry through IMI since 1947. Today's credit to IMI for SELNI is repayable over 15-1/2 years commencing in 1964. The credit is to be guaranteed by the Italian government.

Eximbank's $34 million credit in behalf of SELNI will finance expenditures in the United States for equipment, materials and services--including processing and fabrication of the initial fuel core--required for the installation of the nuclear power plant. Total cost of the plant is estimated at the equivalent of $64 million.

Westinghouse Electric International Company is providing the nuclear equipment and design, as well as the electric generator for the project. Gibbs and Hill of New York, is engineering the project in collaboration with SELNI engineers. The steam turbine will be built by Franco Tosi, Legnano, Italy, under license from Westinghouse. To assist in evaluation of the nuclear aspects of the project, the Export-Import Bank obtained the services of Pickard-Warren-Lowe Associates of Washington, D. C., consulting engineers for atomic energy developments.

Of three nuclear power plants now planned in Italy, SELNI's Enrico Fermi Nuclear Power Plant will be the only one which will be virtually privately owned. It is named after Italy's nuclear physicist who was awarded the Nobel Prize in 1938 for his research in nuclear physics and who directed the first controlled nuclear chain reaction in the United States in 1942. Site of the plant in Northern Italy has not yet been determined.

The installation will comprise a complete nuclear steam generating plant with all necessary auxiliaries. It will include a fueled core; facilities for fuel storage and handling; facilities for storage and disposal of radioactive waste; a turbo-generator; a high voltage switchyard and other necessary

conventional facilities; and workshops, laboratories, and offices.

The proposed nuclear plant is a heterogeneous pressurized reactor using light water as both moderator and coolant, and having a three-region, three-cycle core. Guaranteed heat output is 615,000 kw (thermal). Future fuel loadings are expected to raise this output to 843,000 kw (thermal).

The reactor fuel will be slightly enriched uranium in the form of uranium dioxide clad in stainless steel. The core will contain 39,000 kilograms of uranium dioxide with an enrichment of from 2.6% to 2.8%. The core will be of the three-region design, permitting replacement in units of one-third of the core loading.

Mr. Waugh explained that the heterogeneous pressurized reactor to be installed for SELNI is of inherently safe design and is the type with which the United States has had the greatest amount of experience, having been developed through four previous stages: in pilot plants; in submarines; at the electrical generating plant of the Duquesne Light and Power Company at Shippingport, Pa., and at a new installation of the Yankee Atomic Electric Company at Rowe, Massachusetts. The latter is the prototype of the SELNI plant and is expected to be completed at least a year before SELNI.

During normal operation the reactor will be controlled by the movement of neutron-absorbing rods in the core activated by the magnetic jacks place on top of the reactor. Additional control necessary for a complete shutdown of the plant will be obtained through the injection of a neutron-absorbing solution into the coolant. While the design permits entry of personnel into the reactor plant, their presence will not be required during regular operation of the unit.

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Ordinary (light) water circulated at high pressure in the core will act both as moderator and primary coolant to transfer the heat produced in the reactor core to the steam generator. This primary coolant is circulated through four loops. The design permits any loop to be isolated in the event of malfunctioning equipment. The plant can continue to operate at partial load, and maintenance shutdown periods can be scheduled in advance.

Westinghouse, SELNI, and Gibbs and Hill are collaborating in a continuous evaluation of the plant, the design of which is subject to change throughout the construction period.

SELNI became eligible to receive fuel on a long-range basis and under a deferred payment plan from the U. S. Atomic Energy Commission of February 12, 1959.

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Trentina
Milan
Sade
Edison
Group
Selt-
Valdarno
Italy
Areas to be served by
SELNI Nuclear Power Plant
financed with assistance of a
$34 million credit from
U.S. Export-Import Bank